

Making collider endorsement count

There is broad backing for a US bid to build the International Linear Collider.

A multidisciplinary panel of senior scientists last week endorsed strong US participation in the construction of the International Linear Collider (ILC), the accelerator project that particle physicists see as their top priority. In a report from the National Academy of Sciences (see page 1094), the panel called on the US government to bid to host the ILC.

The Department of Energy and the National Science Foundation, the two agencies that support high-energy physics in the United States, should take the panel's advice and develop such a bid. Unlike previous high-energy physics projects, this one will be truly global from the start. Such international projects need strong backing at the most senior levels of government if they are to progress.

The arguments for building the ILC have been well rehearsed (see *Nature* **426**, 105; 2003). The machine would mark a logical progression from the Large Hadron Collider (LHC), which is now under construction at CERN, the European particle-physics laboratory near Geneva, Switzerland. It would enable physicists to engage in the detailed study of particles, such as the Higgs boson, that they hope to find with the LHC. A US bid to host the ILC would confirm the nation's commitment to particle physics and lend valuable impetus to the collider project. Germany, Japan and CERN itself may also bid to host the project.

High-energy physics is an expensive business, and it is likely that, after the ILC, the basic approach of studying it by building ever-larger particle accelerators will need to be revisited. However, the ILC will attain clearly defined scientific goals at a level of cost — somewhere between \$5 billion and \$10 billion — that can be borne by a well-planned international effort.

The academy panel contains several eminent non-physicists, such as Harold Shapiro, an economist from Princeton University who chaired it, and biologist Harold Varmus, president of the Memorial Sloan-Kettering Cancer Center in New York and former director of the National Institutes of Health. Their endorsement of the project reflects a consensus within the wider scientific community

that particle physics, although expensive and esoteric, is of fundamental importance and worthy of support.

The effort to translate that scientific consensus into political backing for the construction project is only just beginning. So far, those involved with the ILC have done a reasonably good job of maintaining the global nature of the project and ensuring that the physics community remains united behind it. There have been some exceptions to this pattern: the insistence of CERN, for example, that decisions about the siting of the ILC be delayed until an accelerator technology it is trying to develop is ready, strikes some in the community as unnecessary and self-serving.

Although physics from the LHC should feed into the design of the ILC, an international panel chaired by Barry Barish of the California Institute of Technology selected an accelerator technology for the design two years ago, and upwards of \$100 million has already been spent on preparatory research. It is time to start talking about sites.

"The effort to translate the scientific consensus into political backing for the construction project is only just beginning."

However, such a discussion requires an expression of willingness from candidate nations to host the facility, and probably to shoulder at least half of its construction costs. Two years ago, the Office of Science at the Department of Energy identified the ILC as its main medium-term priority. But as with ITER, its top priority, there has been no sign of any willingness from the White House to allocate extra funds for the project.

In the end, political backing for the deal is likely to come from friends of Fermilab, the laboratory near Chicago where it might be built. Fermilab has firmly hitched its wagon to the ILC (see *Nature* **435**, 713; 2005) and is looking to its supporters, such as House speaker Dennis Hastert (Republican, Illinois), to get the project on to the political agenda. Armed with this latest report, that task becomes a bit easier. ■

Bioethics at the bench

Bioethicists should be close — but not too close — to the lab action.

What are the rights of parents and fetuses when genetic tests reveal a 50% likelihood of a disabling illness by the time a child reaches adulthood? Should patients be required to give active consent if their health data are to be used in the future for unforeseeable biomedical research? How should different viewpoints on religion, philosophy and the natural and social sciences be brought to bear in setting regulations?

These are the sorts of questions that bioethicists deal with. Some researchers, however, pay little heed to bioethics, or regard it as a potential impediment to their work. Concerns about the relationship between bioethics and science are as old as the field itself.

Studies into the ethical, legal and social implications (ELSI) of the human genome project, funded mainly by the National Institutes of Health (NIH), were responsible for the rapid expansion of academic bioethics in the United States. But this diverse community has attracted criticism from researchers for being too remote from real science — and from public-interest groups for being too close to it. The latter want to know how it can present a convincing critique of genomics, given its reliance on NIH institutes and investigators.

"The professional field of bioethics has a great deal to say about